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The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-37. (canceled)

38. (Currently amended) A method of forming an active matrix display, comprising:

obtaining a substrate for use in a back plane of the display; and

forming a plurality of pixel control circuits on the substrate, each pixel control circuit comprising at least one three-layer two-terminal switching device and being configured to regulate light from a pixel;

wherein forming at least one three-layer two-terminal switching device comprises forming a first electrode of the switching device;

depositing a single layer of semiconductor from a solution over at least a portion of the first electrode, wherein said depositing comprises forming a patterned layer of the semiconductor; and

forming a second electrode over at least a portion of the semiconductor and overlying at least a portion of the first electrode.

39. (Original) The method of claim 38, wherein the semiconductor is an organic semiconductor.

40. (Original) The method of claim 39, wherein the semiconductor is selected from a group consisting of a polymer, a conjugated polymer and an oligomer.

41. (Previously presented) The method of claim 39, wherein the semiconductor includes one or more polymers having a backbone with units selected from a group consisting of acetylenes, phenylenes, vinylenes, fluorenes, thiophenes and cyclopentadithiophenes.

42. (Original) The method of claim 39, wherein the organic semiconductor includes MEH-PPV (poly(2-methoxy, 5 ethyl, (2' hexyloxy) para-phenylene vinylene).

43. (Original) The method of claim 39, wherein the organic semiconductor includes poly(3-hexyl-thiophene).

PAGE 4/25 * RCVD AT 9/4/2007 7:49:44 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-6/17 * DNIS:2738300 * CSID:5106630920 * DURATION (mm-ss):06-26

44. (Original) The method of claim 38, wherein the solution includes the semiconductor and a solvent.

45. (Withdrawn) The method of claim 38, wherein depositing the semiconductor on the substrate includes spin-coating, spray-coating or dip-coating.

46. (Withdrawn) The method of claim 38, wherein depositing the semiconductor on the substrate includes modifying one or more portions of the substrate such that the solution preferentially adheres to regions of the substrate.

47. (Withdrawn) The method of claim 46, wherein modifying one or more portions of the substrate includes increasing the hydrophobic nature of one or more portions of the substrate.

48. (Withdrawn) The method of claim 47, wherein modifying one or more portions of the substrate includes increasing the hydrophilic nature of one or more portions of the substrate.

49. (Canceled)

50. (Canceled)

51. (Original) The method of claim 38, wherein depositing the semiconductor on the substrate includes printing the semiconductor on the substrate.

52. (Original) The method of claim 51, wherein printing the semiconductor on the substrate includes ink-jet printing, thermal transfer printing, silk-screen printing or offset printing.

53. (Original) The method of claim 51, wherein depositing the semiconductor on the substrate includes ink-jet printing.

54. (Original) The method of claim 38, wherein forming the circuits on the substrate includes forming electrodes on the substrate and depositing the semiconductor includes depositing at least a portion of the semiconductor over the electrodes.

PAGE 5/25 * RCVD AT 9/4/2007 7:49:44 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-6/17 * DNIS:2738300 * CSID:5106630920 * DURATION (mm-ss):06-26

55. (Original) The method of claim 38, wherein forming the circuits on the substrate includes forming one or more electrodes that include an organic conductor on the substrate.

56. (Original) The method of claim 38, wherein the substrate has a melting point less than 350 °C.

57. (Currently amended) A method of forming an active matrix display, comprising:

obtaining a substrate for use in a backplane of the display; and

forming a plurality of pixel control circuits on a substrate, each pixel control circuit comprising at least one three-layer two-terminal switching device and being configured to regulate light from a pixel;

wherein forming at least one two-terminal switching device comprises

forming a first electrode of the switching device;

forming a single layer of patterned organic semiconductor ~~layer~~, wherein the organic semiconductor layer overlies at least a portion of the first electrode; and

forming a second electrode over at least a portion of the patterned semiconductor layer and overlying at least a portion of the first electrode.

58. (Currently amended) A method of forming an active matrix display, comprising:

obtaining a substrate for use in a backplane of the display; and

forming a plurality of pixel control circuits on the substrate, each pixel control circuit comprising at least one three-layer two-terminal switching device and being configured to regulate light from a pixel;

wherein forming at least one two-terminal switching device comprises

forming a first electrode of the switching device;

forming a patterned semiconductor layer over at least a portion of the first electrode; and

forming a second electrode over at least a portion of the semiconductor layer and overlying at least a portion of the first electrode, wherein one or both of the electrodes include an organic conductor.

59. (Previously presented) The method of claim 58, wherein the organic conductor is selected from a group consisting of polyaniline, polypyrrole, polyethylene dioxythiophene.

PAGE 6/25 * RCVD AT 9/4/2007 7:49:44 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-6/17 * DNIS:2738300 * CSID:5106630920 * DURATION (mm-ss):06-26

60. (Original) The method of claim 58, wherein forming the one or more electrodes on the substrate includes depositing the organic conductor on the substrate from a solution.

61. (Withdrawn) The method of claim 60, wherein depositing the organic conductor on the substrate includes spin-coating, spray-coating or dip-coating.

62. (Withdrawn) The method of claim 60, further comprising: patterning the organic conductor after depositing the organic conductor on the substrate.

63. (Withdrawn) The method of claim 62, wherein patterning the organic conductor includes using photolithography to pattern the semiconductor.

64. (Original) The method of claim 60, wherein depositing the organic conductor on the substrate includes patterning the semiconductor on the substrate.

65. (Original) The method of claim 60, wherein depositing the organic conductor on the substrate includes ink-jet printing, thermal transfer printing, silk-screen printing or offset printing.

66. (Original) The method of claim 60, wherein depositing the semiconductor on the substrate includes ink-jet printing.

67. (Previously presented) The method of claim 58, wherein the substrate has a melting point less than 350 degrees C.

68. (Canceled)

69. (Canceled)

70. (Previously presented) The method of claim 38, further comprising:

including the substrate and pixel control circuits in a Micro-Electro-Mechanical Systems (MEMs) display, an organic light emitting diode (OLED) display, an electrochromic display, a Liquid Crystal Display, or an electrophoretic display.

PAGE 7/25 * RCVD AT 9/4/2007 7:49:44 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-6/17 * DNIS:2738300 * CSID:5106630920 * DURATION (mm-ss):06-26

71. (Withdrawn) The method of claim 38, further comprising:
including the substrate and pixel control circuits in an image sensor array.

72. (Previously presented) The method of claim 57, wherein the semiconductor includes one or more components selected from a group consisting of a polymer, a conjugated polymer and an oligomer.

73. (Previously presented) The method of claim 57, wherein the semiconductor includes one or more polymers having a backbone with units selected from a group consisting of acetylenes, phenylenes, vinylenes, fluorenes, thiophenes and cyclopentadithiophenes.

74. (Original) The method of claim 57, wherein the organic semiconductor includes MEH-PPV (poly(2-methoxy, 5 ethyl, (2' hexyloxy) para-phenylene vinylene).

75. (Original) The method of claim 57, wherein the organic semiconductor includes poly(3-hexyl-thiophene).

76. (Previously presented) The method of claim 38, wherein the two-terminal switching device is a diode.

77. (Previously presented) The method of claim 38, wherein the two-terminal switching device has a rectification ratio of at least about 10^5.

78. (Withdrawn) The method of claim 38, wherein the semiconductor deposited from solution comprises an inorganic semiconductor.

79. (Previously presented) The method of claim 38, wherein the two-terminal switching device has an asymmetric current-voltage curve.

80. (Previously presented) The method of claim 57, wherein the two-terminal switching device is a diode.

81. (Previously presented) The method of claim 57, wherein the two-terminal switching device has a rectification ratio of at least about 10^5.

PAGE 8/25 * RCVD AT 9/4/2007 7:49:44 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-6/17 * DNIS:2738300 * CSID:5106630920 * DURATION (mm-ss):06-26

82. (Withdrawn) The method of claim 57, wherein patterning an organic semiconductor on the substrate includes modifying one or more portions of the substrate such that a solution containing the organic semiconductor preferentially adheres to regions of the substrate.

83. (Withdrawn) The method of claim 82, wherein modifying one or more portions of the substrate includes increasing the hydrophobic nature of one or more portions of the substrate.

84. (Withdrawn) The method of claim 82, wherein modifying one or more portions of the substrate includes increasing the hydrophilic nature of one or more portions of the substrate.

85. (Previously presented) The method of claim 57, wherein the two-terminal switching device has an asymmetric current-voltage curve.

86. (Previously presented) The method of claim 58, wherein the two-terminal switching device is a diode.

87. (Previously presented) The method of claim 58, wherein the two-terminal switching device has a rectification ratio of at least about 10^5.

88. (Withdrawn) The method of claim 58, wherein forming one or more electrodes includes modifying one or more portions of the substrate such that a solution containing the organic conductor preferentially adheres to regions of the substrate.

89. (Withdrawn) The method of claim 88, wherein modifying one or more portions of the substrate includes increasing the hydrophobic nature of one or more portions of the substrate.

90. (Withdrawn) The method of claim 88, wherein modifying one or more portions of the substrate includes increasing the hydrophilic nature of one or more portions of the substrate.

91. (Previously presented) The method of claim 58, wherein the two-terminal switching device has an asymmetric current-voltage curve.

PAGE 9/25 * RCVD AT 9/4/2007 7:49:44 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-6/17 * DNIS:2738300 * CSID:5106630920 * DURATION (mm-ss):06-26

92. (Previously presented) The method of claim 58, wherein the two-terminal switching device has a ratio of about 10^3 to 10^9 between a the current passing at a voltage at which the switching device is on and a current passing at a voltage at which the switching device is off.

93. (Previously presented) The method of claim 57, wherein the two-terminal switching device has a ratio of about 10^3 to 10^9 between a the current passing at a voltage at which the switching device is on and a current passing at a voltage at which the switching device is off.

94. (Previously presented) The method of claim 38, wherein the two-terminal switching device has a ratio of about 10^3 to 10^9 between a the current passing at a voltage at which the switching device is on and a current passing at a voltage at which the switching device is off.

95. (New) The method of claim 38, wherein the active matrix display is a Liquid Crystal Display (LCD).

96. (New) The method of claim 38, comprising depositing all of the three layers of at least one of the plurality of two-terminal switching devices by solution-based techniques.

PAGE 10/25 * RCVD AT 9/4/2007 7:49:44 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-6/17 * DNIS:2738300 * CSID:5106630920 * DURATION (mm-ss):06-26